REMARKS

Favorable reconsideration of this application as presently amended and in light of the following remarks is respectfully requested.

Claims 1-6, 8 and 10 are active in this application. Claims 9 and 11 were previously withdrawn from consideration. The present amendment amends Claims 1 and 8 without introducing any new matter; and Claims 7 and 12-18 are cancelled without prejudice or disclaimer.

The outstanding Office Action objected to the Title of the Invention as not being descriptive. Claims 1-3, 7 and 10 were rejected under 35 U.S.C. §102(b) as anticipated by Ueno (Japanese Patent Publication No. JP 2001/077358A). Claims 1, 4-5, 7 and 10 were rejected under 35 U.S.C. §102(b) as anticipated by Takahashi et al (U.S. Patent No. 5,776,812, herein "Takahashi"). Claims 6 and 8 were indicated as allowable if rewritten in independent form.

The Advisory Action of May 5, 2006 indicated that the change of the term "separated" to "isolated" in Claims 1 and 8 by the April 12, 2006 Amendment does not find support in the Applicants' disclosure, and therefore, the Amendment was not entered.

In response to the Restriction Requirement being made final, Claims 12-17, directed to non-elected inventions, are canceled. Applicants reserve the right to present claims directed to the non-elected inventions in a divisional application, which shall be subject to the third sentence of 35 U.S.C. §121.[1]

Applicants also acknowledge with appreciation the indication of allowable subject matter. In response, Claim 8 is rewritten in independent form, by reciting all the features of independent Claim 1 and intervening, dependent Claim 7. Consequently, Claim 7 is cancelled.

[1] "A patent issuing on an application with respect to which a requirement for restriction under this section has been made ... shall not be used as a reference ... against a divisional application." See also MPEP 804.01.

In response to the objection to the title, the title is amended to recite "Semiconductor Device Having a Vertical MOS Trench Gate Structure," to delete the manufacturing of the same.

In response to the outstanding 35 U.S.C. § 102(b) rejections, independent Claim 1 is amended to recite "the separated first and second gate electrodes including, in a cross sectional cut in a depth direction of the trench and including the first and second gate electrodes, at least one portion to which the first and second gate electrodes are not connected," to clarify this feature. Support for the amendment to Claim 1 is found in Applicants' disclosure in Figures 10-11 and the corresponding discussion at page 15, lines 12-27. No new matter has been added.

In light of the amendments to independent Claim 1, Applicants respectfully traverse the rejection of Claims 1-3, 7 and 10 under 35 U.S.C. §102(b) over Ueno, and request reconsideration thereof, as next discussed.

Briefly recapitulating, Claim 1 relates to a semiconductor device, including, *inter alia*, first and second gate electrodes formed on a gate insulating film and opposed to a facing side surfaces of a trench. In addition, the first and second gate electrodes are separated from each other, wherein the separated first and second gate electrodes including, in a cross sectional cut in a depth direction of the trench and including the first and second gate electrodes, ***at least one portion to which the first and second gate electrodes are not connected.***

Turning now to the applied references, Ueno describes a UMOS semiconductor device, wherein a trench 24 is arranged in a top surface of an n+ source region 23.[2] An n-doped sidewall region 20b is formed in side surface portions of Ueno's trench 24, and an n-doped bottom portion 20a is formed in a bottom portion of the trench 24. In Ueno, the n-doped bottom portion 20a reaches a drift layer 21b located underneath the bottom portion 20a. A gate

[2] See Ueno in Figures 1-3.

electrode layer 26 formed of polycrystalline silicon is embedded in the trench 24 via a gate insulating film 25.

However, Applicants' Claim 1 recites that the separated first and second gate electrodes include, in a cross section cut in a depth direction of the trench and including the first and second gate electrodes, at least one portion to which the first and second gate electrodes are not connected. Ueno fails to teach or suggest such a feature, since Ueno teaches a single, contiguous U-shaped gate electrode layer 26 formed in the trench 24. Assuming *in arguendo* that one portion of Ueno's gate electrode layer 26 formed on one side surface of the trench 24 and the other portion of the gate electrode layer 26 formed on the other side surface of the trench 24 correspond to Applicants' Claim 1 first and second gate electrodes, respectively, these two elements are connected in a area of the trench 24, to form contiguous electrode element.

Accordingly, Ueno fails to teach or suggest that the separated first and second gate electrodes include, in a cross sectional cut in a depth direction of the trench and including the first and second gate electrodes, at least one portion to which the first and second gate electrodes are not connected, as recited in amended, independent Claim 1.

In response to the rejections of Claims 1, 4-5, 7 and 10 under 35 U.S.C. §102(b) over Takahashi, this reference does not remedy the deficiencies of Ueno, as next discussed.

Takahashi describes a semiconductor device, wherein a U-groove 50 is formed on a main surface of a wafer 21.[3] A gate oxide film 8 is formed on an inner wall of Takahashi's U-groove 50, and a gate electrode 9 is formed on the gate oxide film 8. However, Takahashi also fails to teach or suggest that the separated first and second gate electrodes include, in a cross sectional cut in a depth direction of the trench and including the first and second gate electrodes, at least one portion to which the first and second gate electrodes are not connected.

[3] See Takahashi in Figures 1(a) and 1(b).

Just like Ueno, Takahashi merely teaches a single, contiguous U-shaped gate electrode 9. As clearly shown in Takahashi's Figure 1(b), the gate electrode 9 is formed integrally on both side surfaces and a bottom surface of the U-groove 50. Therefore, Takahashi does not teach or suggest the features of amended, independent Claim 1.

Therefore, the applied references fail to teach or suggest every feature recited in Applicants' claims, so that Claims 1-6, 8 and 10 are believed to be patentably distinct over Ueno and Takahashi. Therefore, even if the combination of Ueno and Takahashi is assumed to be proper, the combination fails to teach every element of the claimed invention. Accordingly, Applicants respectfully traverse, and request reconsideration of, the rejection based on Ueno and Takahashi.[4]

Since Applicants believe that independent Claim 1 is patentably distinct over the applied references, and is a generic claim, Applicants respectfully request consideration of dependent withdrawn Claims 9 and 11, which depend from independent Claim 1.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 1-6 and 9-11 is earnestly solicited.

[4] See MPEP 2131: "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference," (Citations omitted) (emphasis added). See also MPEP 2143.03: "All words in a claim must be considered in judging the patentability of that claim against the prior art."

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicants' undersigned representative at the below listed telephone number.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

Eckhard H. Kuesters
Attorney of Record
Registration No. 28,870

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)

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